

In the Claims

This listing of claims will replace all prior versions of claims listings in the application.

1. (Previously presented) A method of radially expanding and plastically deforming a first tube, a second tube, and a mechanical connection for coupling the first and second tubes, comprising:
coupling an insert to at least one of the first and second tubes;
coupling the first and second tubes together using the mechanical connection;
radially expanding and plastically deforming the coupled first and second tubes; and
forming a metallurgical bond between the insert and at least one of the first and second tubes by injecting energy into the insert prior to radially expanding and plastically deforming the first and second tubes.
2. (Previously presented) The method of claim 1, wherein the injected energy comprises thermal and mechanical energy.
3. (Previously presented) The method of claim 1, wherein the injected energy comprises thermal and electrical energy.
4. (Previously presented) The method of claim 1, wherein the injected energy comprises thermal and magnetic energy.
5. (Previously presented) The method of claim 1, wherein the injected energy comprises thermal and electromagnetic energy.
6. (Previously presented) The method of claim 1, wherein the injected energy comprises thermal and acoustic energy.
7. (Previously presented) The method of claim 1, wherein the injected energy comprises thermal and vibrational energy.

8.-17. (Cancelled)

18. (Previously presented) A method of radially expanding and plastically deforming a first tube having first threads, and a second tube having second threads, comprising:

- coupling a first insert to the first threads;
- coupling the first threads to the second threads to form a threaded connection by placing the first insert within a portion of the first threads; and
- heating the threaded connection sufficiently to melt at least a portion of the first insert; allowing the melted portion of the first insert to flow and solidify within the threaded connection;
- placing the coupled first and second tubes within a preexisting structure; and
- then radially expanding and plastically deforming the coupled first and second tubes wherein the first insert comprises an inner core comprised of a first material, and an outer layer comprised of a second material, and wherein the first material has a higher melting point than the second material;
- wherein the first insert comprises an outer layer of flux;
- wherein the outer layer of the second material comprises an outer layer of flux;
- wherein the first material is selected from the group consisting of aluminum, indium, bismuth, cadmium, lead, tin, brass, and bronze;
- wherein the second material is selected from the group consisting of aluminum, indium, bismuth, cadmium, lead, tin, brass, and bronze; and
- wherein the preexisting structure is selected from the group consisting of a wellbore casing, a pipeline, and a structural support.

19. (Previously presented) An expandable tubular liner comprising a first tube having first threads, and a second tube having second threads coupled to the first threads; wherein the first threads are to the second threads by the process of:

- coupling the first threads to the second threads;
- wherein the first insert comprises an inner core comprised of a first material, and an outer

layer comprised of a second material, and wherein the first material has a higher melting point than the second material;
wherein the first insert comprises an outer layer of flux;
wherein the outer layer of the second material comprises an outer layer of flux;
wherein the first material is selected from the group consisting of aluminum, indium, bismuth, cadmium, lead, tin, brass, and bronze; and
wherein the second material is selected from the group consisting of aluminum, indium, bismuth, cadmium, lead, tin, brass, and bronze.

20. (Previously presented) An apparatus comprising a preexisting structure coupled to a tubular liner, the tubular liner comprising a first tube including first threads, and a second tube including second threads, wherein the tubular liner is coupled to the preexisting structure by the process of:
coupling a first insert to the first threads;
coupling the first threads to the second threads to form a threaded connection; and by placing the first insert within a portion of the first threads;
heating the threaded connection sufficiently to melt first insert;
allowing the melted portion of the first insert to flow and solidify within the threaded connection;
placing the coupled first and second tubes within a preexisting structure; and then radially expanding and plastically deforming the coupled first and second tubes;
wherein the first insert comprises an inner core comprised of a first material, and an outer layer comprised of a second material, and wherein the first material has a higher melting point than the second material;
wherein the first insert comprises an outer layer of flux;
wherein the outer layer of the second material comprises an outer layer of flux;
wherein the first material is selected from the group consisting of aluminum, indium, bismuth, cadmium, lead, tin, brass, and bronze;
wherein the second material is selected from the group consisting of aluminum, indium, bismuth, cadmium, lead, tin, brass, and bronze; and

Appl. No. 10/597,132
Amendment dated September 27, 2011
Reply to Office Action of September 1, 2011

wherein the preexisting structure is selected from the group consisting of a wellbore casing,
a pipeline, and a structural support.